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NOMENCLATORIAL CHANGES REQUIRED BY SOME
GRAMINEAE OF THE SEVENTH EDITION
OF GRAY'S MANUAL.

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DURING my systematic studies in the Family Gramineae I have noted that several generic and specific names are used in the Seventh Edition of Gray's Manual, which do not conform to the International Rules for Botanical Nomenclature ("Vienna Code"). It is the aim of this paper to bring these observations before the users of the Manual.

In most instances the defect arises from a violation of Sect. 7, Art. 50 of the International Rules ("Vienna Code"), which states that a name shall not be rejected on account of the existence of an earlier homonym which is universally regarded as non-valid. These names, taken up by Hitchcock in Gray's Manual, though contrary to the "Vienna Code," remain valid according to the American Code by Sect. V, Canon 16, which states without qualification that "a name is rejected when preoccupied (homonym)." This latter rule, while not without its defects, certainly tends toward a more stable nomenclature, and it seems a pity that it was not adopted at the Vienna Congress. Some of the untenable names in the Manual are changes from the Sixth Edition, but the majority of them are those of species new to the Manual, which have been described by botanists using the American Code and accepted without emendation in the preparation of the Seventh Edition. In two instances the change is necessitated by later knowledge regarding types.

Naturally much of this paper is the result of compilation and of

study of synonymy as given by recent authors, but I have endeavored to weigh all the evidence and to look up the views of earlier authors regarding the names involved. Where possible I have made my own interpretation of the original description and have tried to learn if the type specimens of the species described have been examined recently and, if so, what they have been considered to be. In all instances where changes in nomenclature are made I have satisfied myself that the original descriptions are conformable to the requirements of the "Vienna Code." Certain of the names involved lead to complicated questions, where personal judgment is a factor, and in this respect I wish to express my thanks to Dr. B. L. Robinson, who has been more than kind in his suggestions and advice. My thanks are also due to Prof. A. S. Hitchcock, who has been kind enough to read the paper and offer certain suggestion relating to types, and to Miss M. A. Day for her assistance in questions relating to bibliography.

ERIANTHUS SACCHAROIDES Michx.

This name is valid according to the American Code, but not according to the "Vienna Code." The oldest specific name of the plant is *Anthoxanthum giganteum* Walt. Fl. Carol. 65 (1788) and is cited by Michaux Fl. Bor.-Am. 1: 55 (1803) as a synonym of his species. According to the American Code the specific name *giganteus* cannot be taken up on account of *E. giganteus* Muhl. Cat. 4 (1813); but this does not invalidate its use, when the "Vienna Code" is followed, as *E. giganteus* Muhl. was based on *Andropogon alopecuroides* L. Sp. Pl. 1045 (1753) which equals *E. divaricatus* (L.) Hitchc. Contr. Nat. Herb. 12: 125 (1908). [Cf. Hitchc. l. c.] Consequently by Sect. 7, Art. 50 of the "Vienna Code" the specific name *giganteus* is available for the species commonly known as *E. saccharoides* Michx.

ERIANTHUS giganteus (Walt.) comb. nov. not Muhl. l. c. (1813). Synonymy in part. *Anthoxanthum giganteum* Walt. Fl. Carol. 65 (1788). *E. saccharoides* Michx. Fl. Bor.-Am. 1: 55 (1803); Watson & Coulter in Gray Man. ed. 6, 637 (1890) excl. syn.; Hitchc. in ed. 7, 93 (1908); Nash in Britt. Man. ed. 3, 68 (1907). *E. alopecuroides* as to descr. Gray Man. 616 (1848)—this is a misapplication of the name by Prof. Gray as his description is that of *E. giganteus* (*E. saccharoides* Michx.) and not of *E. divaricatus* (L.) Hitchc., which has a twisted awn and loose panicle.

PANICUM HEMITOMUM Schultes.

Under this species in Hitchcock and Chase Contr. Nat. Herb. **15** : 322 (1910) ¹ the first synonym is *P. Walteri* Ell. Sk. Bot. S. C. & Ga. **1** : 115 (1816). Schultes Mant. **2** : 227 (1824), bases his species, *P. hemitomum* on *P. Walteri* Muhl. Descr. Gram. 108 (1817); this is the second synonym given by Hitchcock and Chase l. c. 323. *P. Walteri* Muhl. was probably described from Elliott's plant, as the specimen in the Muhlenberg Herbarium is labeled "Panicum dimidiatum Walter, Ell. 478" and is evidently a duplicate of Elliott's plant [cf. Hitchc. & Chase l. c. 323]. Both Elliott and Muhlenberg cite *P. dimidiatum* Walt. Fl. Carol. 72 (1788), as a synonym of their species [in fact the herbarium specimens of both are labeled *P. dimidiatum* Walt.—cf. Scribn. U. S. Div. Agrost. Circ. **29** : 4 (1901) and Scribn. & Merr. U. S. Div. Agrost. Circ. **27** : 2 (1900). The name *dimidiatum* antedates all others applied to the species, but it is not advisable to use it because unquestionably it is a misapplication of *P. dimidiatum* L. Sp. Pl. 57 (1753) and not intended as a new species. *P. dimidiatum* L. equals *Stenotaphrum dimidiatum* (L.) Brogn. in Duperry Voy. Coq. Bot. 127 (1828) [cf. Hitchc. Contr. Nat. Herb. **12** : 116 (1908) under discussion of *P. dissectum* L.].

P. Walteri Ell. is well described and the type specimen is known. However, the specific name *Walteri*, of Elliott, is antedated by *P. Walteri* Pursh Fl. **1** : 66 (1814) and *P. Walteri* Poir. in Lam. Dict. Suppl. **4** : 282 (1816) and is consequently invalid according to the American Code. *P. Walteri* Pursh l. c. from the description is evidently a species of *Echinochloa* and is given by Torrey Fl. N. Y. **2** : 424 (1843), as a synonym of *Echinochloa crusgalli* (L.) Beauv. *P. Walteri* Poir. l. c. equals *P. Boscii* Poir. in Lam. Dict. Suppl. **4** : 278 (1816) [cf. Hitchc. & Chase l. c. 317]. Since the older *P. Walteri* Pursh and *P. Walteri* Poir. are invalid, they do not invalidate *P. Walteri* Ell. (Sect. 7, Art. 50 of the "Vienna Code"), and consequently the valid name of what has been known as *P. hemitomum* Schultes is *P. Walteri* Ell.

PANICUM WALTERI Ell. Sk. Bot. S. C. & Ga. **1** : 115 (1816), not Pursh l. c. (1814) nor Poir. l. c. (1816). Synonymy in part: *P. hemitomum* Schultes Mant. **2** : 227 (1824); Hitchc. in Gray Man. ed. 7, 103

¹I have cited Hitchcock & Chase North American Species of Panicum under the serial title Contr. Nat. Herb. **15** throughout this article.

(1908); Hitch. & Chase Contr. Nat. Herb. **15** : 322 (1910). *P. Curtisii* Chapm. Fl. So. U. S. 573 (1860); Watson & Coulter in Gray Man. ed. 6, 631 (1890). *Brachiaria digitalioides* (Carpenter) Nash in Britt. Man. 77 (1901); ed. 3, 77 (1907).

For complete synonymy cf. Hitchc. & Chase l. c.

PANICUM VERRUCOSUM Muhl.

According to the American Code *P. debile* Ell. Sk. Bot. S. C. & Ga. **1** : 129 (1816), the oldest name applied to the species, is invalid on account of older usage of the specific name *debile*. *P. debile* Desf. Fl. Atlant. **1** : 57 (1798) equals *Digitaria sanguinalis* (L.) Scop. Fl. Carnol. ed. 2, **1** : 52 (1772). *P. debile* Poir. in Lam. Dict. Suppl. **4** : 283 (1816) is based on *P. divaricatum* Michx. Fl. Bor. Am. **1** : 50 (1803), which equals *Festuca nutans* Spreng. Fl. Hal. Mant. 34 (1807) (*F. obtusa* Spreng.) [cf. Hitchc. Contr. Nat. Herb. **12** : 149 (1908)]. Consequently, since the older *P. debile* of Desfontaine and of Poiret have been definitely reduced to synonymy, *P. debile* Ell. is the valid name of the species commonly known as *P. verrucosum* Muhl. (Sect. 7, Art. 50 of the "Vienna Code").

PANICUM DEBILE Ell. Sk. Bot. S. C. & Ga. **1** : 129 (1816), not Desf. l. c. (1798), not Poir. l. c. (1816). Synonymy in part: *P. verrucosum* Muhl. Descr. Gram. 113 (1817); Hitch. in Gray Man. ed. 7, 103 (1908); Hitchc. & Chase Contr. Nat. Herb. **15** : 127 (1910).

For complete synonymy cf. Hitchc. & Chase l. c.

PANICUM STIPITATUM Nash.

This specific name is antedated by *P. elongatum* Pursh Fl. **1** : 69 (1814), upon which it is based. According to the American Code, *P. elongatum* Pursh is invalidated by *P. elongatum* Salisb. Prodr. 18 (1796). *P. elongatum* Salisb. is, however, based on *P. italicum* L. Sp. Pl. 56 (1753) which equals *Setaria italica* (L.) Beauv. Agrost. 51 (1812). Consequently according to the "Vienna Code" (Sect. 7, Art. 50) *P. elongatum* Pursh,— which is identical with *P. stipitatum* Nash [cf. Hitchc. & Chase Contr. Nat. Herb. **15** : 104 (1908)],— is the valid name.

PANICUM ELONGATUM Pursh Fl. **1** : 69 (1814) not Salisb. l. c. (1796).

Synonymy in part: *P. stipitatum* Nash in Scribn. U. S. Div. Agrost. Bull. **17**, ed. 2, 56, fig. 352 (1901); Hitchc. in Gray Man. ed. 7, 105 (1908); Hitchc. & Chase Contr. Nat. Herb. **15** : 104 (1910).

For complete synonymy cf. Hitchc. & Chase l. c.

PANICUM DEPAUPERATUM Muhl.

The oldest specific name is *P. strictum* Pursh Fl. **1** : 69 (1814), which is the first synonym given by Hitchcock & Chase Contr. Nat. Herb. **15** : 151 (1910) under *P. depauperatum* Muhl. It is also given as a synonym of *P. depauperatum* Muhl. by Gray Man. 614 (1848) and by many other authors. *P. strictum* Pursh is not valid, according to the American Code, on account of *P. strictum* R. Br. Prodr. 190 (1810). It is valid, however, according to the "Vienna Code" because *P. strictum* R. Br. is conceded, by various authors, equal to *P. marginatum* var. *strictum* Benth. Fl. Austral. **7** : 846 (1878) who gives it as a synonym of his variety. There is also *P. strictum* Roxb. Hort. Beng. 7 (1814), which is a *nomen nudum*. Consequently by Sect. 7, Art. 50 and Sect. 4, Art. 37 the older uses of *strictum* as a specific name are invalid and *P. strictum* Pursh becomes the valid name for what is known as *P. depauperatum* Muhl.

PANICUM STRICTUM Pursh Fl. **1** : 69 (1814) not R. Br. l. c. (1810) nor Roxb. l. c. (1814). Synonymy in part: *P. depauperatum* Muhl. Descr. Gram. 112 (1817); Gray Man. 614 (1848); Watson & Coulter in ed. 6, 663 (1890), Hitchc. in ed. 7, 105 (1908); Hitchc. & Chase Contr., Nat. Herb. **15** : 151 (1910).

For complete synonymy cf. Hitchc. & Chase l. c.

PANICUM YADKINENSE Ashe.

P. yadkinense Ashe in Journ. Elisha Mitchell Soc. **16** : 85 (1900) is based on *P. maculatum* Ashe in l. c. **15** : 44 (1898). This is the oldest name of the species if we except the uncertain *P. dumus* Desv. Opusc. 88 (1831), which is made a questionable synonym of *P. yadkinense* Ashe by Hitchcock and Chase Contr. Nat. Herb. **15** : 195 (1910). There are two older uses of the name *maculatum* neither of which stand in the way of the Ashe usage when the "Vienna Code" is followed.

P. maculatum Aubl. Pl. Guian. **1** : 51 (1775) equals *P. latifolium*

L. Sp. Pl. 58 (1753) [cf. Doell in Mart. Fl. Bras. 2 pt. 2 : 207 (1877) in syn. and Ind. Kew. 2, pt. 1, 415 (1895)]. *P. maculatum* Reichb. ex Schlecht. & Cham. in Linnaea 6 : 33 (1831) is used in synonymy under *P. divaricatum* 2) *latifolium* and is consequently invalid (Sect. 4. Art. 37 of the "Vienna Code"). Incidentally *P. divaricatum* L. Syst. Nat. ed. 10, 2 : 871 (1759) equals *Lasiacis divaricata* (L.) Hitchc. [cf. Hitchc. & Chase Contr. Nat. Herb. 15 : 16 (1910)]. Since, according to the "Vienna Code," both older uses of the specific name *maculatum* are invalid *P. maculatum* Ashe replaces *P. yadkinense* Ashe. According to the American Code, *P. yadkinense* Ashe remains the valid name.

PANICUM MACULATUM Ashe in Journ. Elisha Mitchell Soc. 15 : 44 (1898) not Aubl. l. c. (1775), not Reichb. ex Schlecht. & Cham. l. c. (1831). Synonymy in part: *P. yadkinense* Ashe in l. c. 16 : 85 (1900); Hitchc. in Gray Man. ed. 7, 107 (1908); Hitchc. & Chase Contr. Nat. Herb. 15 : 195 (1910).

For complete synonymy cf. Hitchc. & Chase l. c.

PANICUM WRIGHTIANUM Scribn.

This species, which belongs next to *P. leucothrix* Nash, is not described in the Manual, but as it has been collected in southern New Jersey [cf. Hitchc. & Chase Contr. Nat. Herb. 15 : 208 (1910)] and at Barnstable, Mass. by Mr. E. W. Sinnott, who reports his locality in RHODORA 14 : 29 (1912), it seems best to speak of it. The authenticity of Mr. Sinnott's specimens is unquestionable, as the writer has specimens in his herbarium and as Mr. Sinnott states that the material was determined by Mrs. Agnes Chase of the Bureau of Plant Industry.

The oldest name applied to this species is *P. strictum* Bosc. in R. & S. Syst. Veg. 2 : 447 (1817), but this name is not available because of *P. strictum* Pursh (1814) which is the valid name of *P. depauperatum* Muhl. [cf. discussion under *P. depauperatum* Muhl.].

The second synonym given by Hitchcock and Chase Contr. Nat. Herb. 15 : 207 (1910), under *P. Wrightianum* Scribn., is *P. minutulum* Desv. Opusc. 87 (1831). According to the American Code the use of the name *minutulum* for this species is invalidated by the older *P. minutulum* Gaud. in Freycinet Voy. Bot. 410 (1826). This equals *Isachne miliacea* Roth Nov. Pl. Sp. 58 (1821) [cf. Hook. f. Fl. Brit. Ind. 7 : 25 (1896)]. According to the "Vienna Code" (Sect. 7,

Art. 50) *P. minutulum* Gaud. does not invalidate *P. minutulum* Desv., which consequently replaces *P. Wrightianum* Scribn.

PANICUM MINUTULUM Desv. Opusc. 87 (1831) not Gaud. l. c. (1826).
Synonymy in part: *P. Wrightianum* Scribn. U. S. Div. Agrost. Bull. 11 : 44, fig. 4 (1898) & Hitchc. & Chase Contr. Nat. Herb. 15 : 207 (1910); Sinnott in RHODORA 14 : 29 (1912).

For complete synonymy cf. Hitchc. & Chase l. c.

PANICUM HUACHUCAE Ashe Var. SILVICOLA Hitchc. & Chase.

According to the American Code this name is correct, but by the "Vienna Code" (Sect. 6, Art. 48) the varietal name *fasciculatum* (*P. dichotomum* L. var. *fasciculatum* Torr.) must be retained, as the fact that there is a species of the same name (*P. fasciculatum* Sw.) does not make the use of *fasciculatum* as a varietal name invalid. The valid name, consequently, becomes

PANICUM HUACHUCAE Ashe var. **fasciculatum** (Torr.) comb. nov.
Synonymy in part: *P. dichotomum* L. var. *fasciculatum* Torr. Fl. No. & Mid. U. S. 145 (1824). *P. huachucae* Ashe var. *silvicola* Hitchc. & Chase in Robinson in RHODORA 10 : 64 (1908); Hitchc. in Gray Man. ed. 7, 109 (1908); Hitchc. & Chase Contr. Nat. Herb. 15 : 216 (1910).

For complete synonymy cf. Hitchc. & Chase l. c.

PANICUM COLUMBIANUM Scribn.

The oldest name of this species is *P. heterophyllum* Bosc in Nees Agrost. Bras. 227 (1829). This is the first synonym given by Hitchcock and Chase, Contr. Nat. Herb. 15 : 247 (1910). The specific name *heterophyllum* is invalid, according to the American Code, as there are older usages of *heterophyllum*, but these usages do not invalidate its use, according to the "Vienna Code" (Sect. 7, Art. 50) since two are reduced to synonymy and the third is a *nomen nudum* (Sect. 4, Art. 37).

P. heterophyllum Spreng. Neue Entdeck. 3 : 13 (1822) equals *P. pilosum* Sw. Prodr. 22 (1788) [cf. Ind. Kew 2 pt. 1 : 414 (1895)]. Steudel Nom. Bot. ed. 2, 2 : 261 (1841) under *P. pilosum* Sw. gives *Setaria pilosa* Kunth as a synonym and Kunth Rev. Gram. 1 : 47 (1829) under *Setaria pilosa* gives *P. pilosum* Sw. and *P. heterophyllum* Spreng. as synonyms. I cannot find that, at any time since Kunth, anyone has used *P. heterophyllum* Spreng. otherwise than as a synonym

of *P. pilosum* Sw. and consequently it would be inadvisable to consider it as rendering *P. heterophyllum* Bosc invalid. *P. heterophyllum* Muhl. in Trans. Am. Phil. Soc. **3** : 160 (1793) is a *nomen nudum* and is referred to under *P. microcarpon* Muhl. by Hitchcock & Chase l. c. 181 (1910). *P. heterophyllum* Sw. Adnot. Bot. 6 (1829) equals *P. sphaerocarpon* Ell. [cf. Hitchc. & Chase l. c. 251 (1910)]. Consequently, according to the "Vienna Code," *P. heterophyllum* Bosc is the valid name for what has been known as *P. columbianum* Scribn.

PANICUM HETEROPHYLLUM Bosc in Nees Agrost. Bras 227 (1829), not Spreng. l. c. (1822), nor Muhl. l. c. (1793), nor Sw. l. c. (1829). Synonymy in part: *P. columbianum* Scribn. U. S. Div. Agrost. Bull. **7** : 78, fig. 60 (1898); Hitchc. in Gray Man. ed. 7, 112 (1908); Hitchc. & Chase Contr. Nat. Herb. **15** : 247 (1910).

PANICUM COLUMBIANUM Scribn. Var. THINIUM Hitch. & Chase

Since the specific name has been altered it is necessary to mention the new varietal combination.

P. HETEROPHYLLUM Bosc Var. **thinium** (Hitchc. & Chase) comb. nov. *P. unciphyllum* Trin. Var. *thinium* Hitchc. & Chase, RHODORA **8** : 209 (1906). *P. columbianum* Scribn. Var. *thinium* Hitchc. & Chase in Robinson, RHODORA **10** : 64 (1908); Hitchc. in Gray Man. ed. 7, 112 (1908); Hitchc. & Chase Contr. Nat. Herb. **15** : 248 (1910).

PANICUM POLYANTHES Schultes.

The oldest name for this species is *P. multiflorum* Ell. Sk. Bot. S. C. & Ga. **1** : 122 (1816) [cf. Hitchc. & Chase Contr. Nat. Herb. **15** : 254 (1910) in syn. under *P. polyanthes* Schultes]. According to the American Code *P. multiflorum* Poir. in Lam. Dict. Suppl. **4** : 282 (1816) renders the use of *multiflorum* as the specific name invalid, but by Sect. 7, Art. 50 of the "Vienna Code" *P. multiflorum* Poir. which equals *P. dichotomiflorum* Michx. Fl. Bor. Am. **1** : 48 (1803) [cf. Hitchc. & Chase l. c. 48 (1910)] does not invalidate *P. multiflorum* Ell. Consequently the valid name of the species now known as *P. polyanthes* Schultes is *P. multiflorum* Ell.

PANICUM MULTIFLORUM Ell. Sk. Bot. S. C. & Ga. **1** : 122 (1816) not Poir. l. c. (1816). Synonymy in part: *P. polyanthes* Schultes Mant. **2** : 257 (1824); Hitchc. in Gray Man. ed. 7, 113 (1908); Hitchc. & Chase Contr. Nat. Herb. **15** : 254 (1910).

For complete synonymy cf. Hitchc. & Chase l. c.

PANICUM ASHEI Pearson.

P. Ashei Pearson in Ashe Journ. Elisha Mitchell Soc. **15** : 35 (1898) is antedated by *P. umbrosum* LeConte in Torr. Cat. Pl. N. Y. 91 (1819). *P. umbrosum* Le Conte is given as a synonym of *P. Ashei* Pearson by Hitchcock and Chase Contr. Nat. Herb. **15** : 301 (1910) and is represented by specimens in the Torrey Herbarium, according to Hitchcock and Chase l. c., who point out that, while the sheet also contains a piece of a culm of *P. dichotomum* L., Le Conte's description (though not applying in all respects) applies better to the two vernal culms. These two vernal culms are what is known as *P. Ashei* Pearson.

Retzius [Obs. **4** : 16 (1786)] describes a plant as *P. umbrosum* which usage of *umbrosum* antedates *P. umbrosum* Le Conte (1819). The Retzius species is, however, given by various authors as a synonym of *P. prostratum* Lam. Tabl. Encycl. **1** : 171 (1791) which equals *P. reptans* L. Syst. Nat. ed. 10, **2** : 870 (1759) [cf. Hitchc. & Chase l. c. 36 (1910)]. Lamarck l. c. under *P. prostratum* cites *P. umbrosum* Retz. as a synonym. Nees, Agrost. Bras. 109 (1829) cites it as a synonym under *P. procumbens* Lam. [As Lamarck apparently did not describe any species under the name of *procumbens*, it is probable that Nees intended to treat *P. prostratum* Lam. especially so as he cites the Lamarck varieties of *P. prostratum*]. Hooker f. [Fl. Brit. Ind. **7** : 34 (1896)] cites *P. umbrosum* Retz. in a note under *P. prostratum* Lam. saying that he (Hooker f.) cannot untangle the synonymy of *P. prostratum* Lam. and *P. villosum* Lam., but seems to lay stress on the synonymy as given by Nees.

As there has been no disposition on the part of any writer from the time of Lamarck (1791) to Hooker f. (1896) to treat *P. umbrosum* Retz. as a valid species it would seem advisable to accept the general belief that it is a synonym of *P. reptans* L. (*P. prostratum* Lam.), in which case (according to Sect. 7, Art. 50 of the "Vienna Code") the valid name of *P. Ashei* Pearson is *P. umbrosum* Le Conte. According to the American Code *P. Ashei* Pearson remains valid.

PANICUM UMBROSUM Le Conte in Torr. Cat. Pl. N. Y. 91 (1819) not Retz. l. c. (1786). *P. Ashei* Pearson in Ashe Journ. Elisha Mitchell Soc. **15** : 35 (1898); Hitchc. in Gray Man. ed. 7, 113 (1908); Hitchc. & Chase Contr. Nat. Herb. **15** : 301 (1910).

(To be concluded.)